

ACE PRIMERFLEX PLUS A

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1 Product identifier.

Product Name: PRIMERFLEX PLUS A
Registration number : Not available.
Product code : 00024813
Product description : isocyanate

1.2 Relevant identified uses of the substance or mixture and uses advised against.

Product use : Component of a Polyurethane System

1.3 Details of the supplier of the safety data sheet.

Company: ACE COATINGS
Address: Campo Sagrado, 1133205
City: Gijón
Province: Asturias
Telephone: +34 985 323 328
E-mail: info@acecoatings.com
Web: www.acecoatings.com

1.4 Emergency telephone number: (Available 24 hours)

Telephone number : EUROPE: +34 985 32 33 28

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H332

Skin Irrit. 2, H315

Eye Irrit. 2, H319

Resp. Sens. 1, H334

Skin Sens. 1, H317

Carc. 2, H351

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STOT SE 3, H335 (Respiratory tract irritation)
STOT RE 2, H373

Ingredients of unknown toxicity:

Ingredients of unknown ecotoxicity:

Classification according to Directive 1999/45/EC [DPD]

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification : Carc. Cat. 3; R40

Xn; R20, R48/20

Xi; R36/37/38

R42/43

Physical/chemical hazards

Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures.

Human health hazards

Limited evidence of a carcinogenic effect.

Harmful by inhalation.

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Irritating to eyes, respiratory system and skin.

May cause sensitisation by inhalation and skin contact.

This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons. The onset of the respiratory symptoms may be delayed for several hours after exposure.

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



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Signal word : Danger

Hazard statements :

Harmful if inhaled.

Causes serious eye irritation.

Causes skin irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

General : Not applicable.

Prevention : Do not breathe vapour or spray. In case of inadequate ventilation wear respiratory protection. Wear protective gloves/protective clothing/eye protection/face protection.

Response :IF INHALED:Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN:Wash with plenty of soap and water. IF IN EYES:Rinse cautiously with water for several minutes.Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or if you feel unwell:Call a POISON CENTER or physician.

Storage :Not applicable.

Disposal :Not applicable.

Hazardous ingredients :

Isocyanic acid, polymethylenepolyphenylene ester

Supplemental label elements: Contains isocyanates. May produce an allergic reaction.

Supplemental label elements: Contains isocyanates - See information supplied by the manufacturers. This information is supplied in the current Safety Data Sheet.

Special packaging requirements Containers to be fitted with child-resistant fastenings: Not applicable.

Tactile warning of danger: Not applicable.

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2.3 Other hazards

Other hazards which do not result in classification: None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
Polymethylene polyphenylene isocyanate	CAS: 9016-87-9 EC: Polymer	60-100	Carc. Cat. 3; R40 Xn; R20, R48/20 Xi; R36/37/38 R42/43	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 (Respiratory tract irritation) STOT RE 2, H373 (respiratory tract) (inhalation) Eye Irrit. 2, H319	[1]
Propylene carbonate	CAS: 108-32-7 EC: 203-572-1 RRN: 01-2119537232-48	13-30	Xi; R36		[1]
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro.-omega.-hydroxypoly(oxy-1, 2-ethanediyl)	CAS: 70644-56-3 EC: Polymer	3-7	Carc. Cat. 3; R40 Xn; R20, R48/20 Xi; R36/37/38 R42/43 See Section 16 for the full text of the R-phrases declared above.	Acute Tox. 4, H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 (Respiratory tract irritation) STOT RE 2, H373 (respiratory tract) (inhalation) See Section 16 for the full text of the H statements declared above.	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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Type

- [1] Substance classified with a health or environmental hazard
 - [2] Substance with a workplace exposure limit
 - [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
 - [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
 - [5] Substance of equivalent concern
- Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.

Skin contact

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If

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vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact

Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation

Adverse symptoms may include the following: respiratory tract irritation, coughing, wheezing and breathing difficulties, asthma .

Skin contact

Adverse symptoms may include the following: irritation, redness.

Ingestion

No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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Specific treatments : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide .

5.3 Advice for firefighters

Special precautions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training.

Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows.

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: HANDLING AND STORAGE

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

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7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitisation problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate

ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Isocyanic acid, polymethylenepolyphenylene ester	EH40/2005 WELs (United Kingdom (UK), 12/2011). Skin sensitiser. Notes: as NCO STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.
4,4'-Methylenediphenyl diisocyanate	EH40/2005 WELs (United Kingdom (UK), 12/2011). Skin sensitiser. STEL: 0.07 mg/m ³ , (as NCO) 15 minutes. TWA: 0.02 mg/m ³ , (as NCO) 8 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)

Reference to national guidance

documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
Polymethylene polyphenylene isocyanate	DNEL	Short term Dermal	50 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	0.1 mg/m ³	Workers	Systemic
	DNEL	Short term Dermal	28.7 mg/cm ²	Workers	Local
	DNEL	Short term Inhalation	0.1 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	0.05 mg/m ³	Workers	Systemic
	DNEL	Long term Inhalation	0.05 mg/m ³	Workers	Local
	DNEL	Short term Dermal	25 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	0.05 mg/m ³	Consumers	Systemic
	DNEL	Short term Oral	20 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Dermal	17.2 mg/cm ²	Consumers	Local
	DNEL	Short term Inhalation	0.05 mg/m ³	Consumers	Local
	DNEL	Long term Inhalation	0.025 mg/m ³	Consumers	Systemic
	DNEL	Long term Inhalation	0.025 mg/m ³	Consumers	Local
	DNEL	Long term Inhalation	0.025 mg/m ³	Consumers	Local

Propylene carbonate	DNEL	Inhalation Long term Dermal	m ³ 20 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	20 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	70.56 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	10 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	17.4 mg/m ³	Consumers	Systemic
	DNEL	Long term Oral	10 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	10 mg/m ³	Consumers	Local
	DNEL	Short term Dermal	50 mg/kg bw/day	Workers	Systemic
Isocyanic acid, polymethylenepoly phenylene ester, polymer with . alpha.-hydro-.omega.-hydroxypoly (oxy-1,2-ethanediyl)	DNEL	Short term Inhalation	0.1 mg/m ³	Workers	Systemic
	DNEL	Short term Dermal	28.7 mg/cm ²	Workers	Local
	DNEL	Short term Inhalation	0.1 mg/m ³	Workers	Local

DNEL	Short term Inhalation	0.1 mg/m ³	Workers	Local
DNEL	Long term Inhalation	0.05 mg/m ³	Workers	Systemic
DNEL	Long term Inhalation	0.05 mg/m ³	Workers	Local
DNEL	Short term Dermal	25 mg/kg bw/day	Consumers	Systemic
DNEL	Short term Inhalation	0.05 mg/m ³	Consumers	Systemic
DNEL	Short term Oral	20 mg/kg bw/day	Consumers	Systemic
DNEL	Short term Dermal	17.2 mg/cm ²	Consumers	Local
DNEL	Short term Inhalation	0.05 mg/m ³	Consumers	Local
DNEL	Long term Inhalation	0.025 mg/m ³	Consumers	Systemic
DNEL	Long term Inhalation	0.025 mg/m ³	Consumers	Local

Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Polymethylene polyphenylene isocyanate	PNEC	Fresh water	1 mg/l	Assessment Factors
	PNEC	Marine	0.1 mg/l	Assessment Factors
	PNEC	Soil	1 mg/kg	Assessment Factors
	PNEC	Sewage Treatment Plant	1 mg/l	Assessment Factors
Propylene carbonate	PNEC	PNECintermittent	10 mg/l	-
	PNEC	PNECintermittent	9 mg/l	Assessment Factors
	PNEC	Marine	0.09 mg/l	Assessment Factors
	PNEC	Fresh water	0.9 mg/l	Assessment Factors
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .	PNEC	Sewage Treatment Plant	7400 mg/l	Assessment Factors
	PNEC	Soil	0.81 mg/kg	Assessment Factors
	PNEC	Fresh water	1 mg/l	Assessment Factors
	PNEC	Fresh water	1 mg/l	Assessment Factors
alpha.-hydro.-omega.-hydroxypoly (oxy-1,2-ethanediyl)	PNEC	Marine	0.1 mg/l	Assessment Factors
	PNEC	Soil	1 mg/kg	Assessment Factors
	PNEC	Sewage Treatment Plant	1 mg/l	Assessment Factors
	PNEC	PNECintermittent	10 mg/l	-

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8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing.

Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US).

Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Colour: Brownish-red., Clear.

Odour: Not available.

Odour threshold : Not available.

pH: Not available.

Melting point/freezing point: Not available.

Initial boiling point and boiling range: Not available.

Flash point: Closed cup: >130°C

Open cup: >150°C

Evaporation rate: Not available.

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Burning rate: Not applicable.

Upper/lower flammability or explosive limits: Not applicable.

Vapour pressure : Not applicable.

Vapour density : Not applicable.

Relative density : 1.22

Solubility(ies)

Water solubility : Not available.

Partition coefficient: n-octanol/ water (LogKow): Not available.

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Auto-ignition temperature: Not available.

Decomposition temperature : Not available.

Viscosity: Dynamic (25°C): 45 mPa·s Kinematic: Not available. Kinematic (40°C): Not available.

Explosive properties: Not available.

Oxidising properties : Not available.

9.2 Other information

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No specific data.

10.5 Incompatible materials

No specific data.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Endpoint	Species	Result	Exposure
Polymethylene polyphenylene isocyanate	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.49 mg/l	4 hours
	LD50 Dermal	Rabbit - Male, Female	>9400 mg/kg	-
Propylene carbonate	LD50 Oral	Rat - Male	>10000 mg/kg	-
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male, Female	33520 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.49 mg/l	4 hours
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro.-omega.- hydroxypoly(oxy-1, 2-ethanediyl)	LD50 Dermal	Rabbit - Male, Female	>9400 mg/kg	-
	LD50 Oral	Rat - Male	>10000 mg/kg	-

Conclusion/Summary: No additional information.

Skin:

Polymethylene: Irritating to skin.

polyphenylene

isocyanate

Propylene carbonate: Non-irritating to the skin.

Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.- hydro.-omega.-hydroxypoly(oxy-1, 2-ethanediyl)

Eyes :

Polymethylene Based on the human occupational exposure data, this substance is considered as irritating to eyes.

polyphenylene

isocyanate

Propylene carbonate Irritating to eyes.

Isocyanic acid, polymethylenepoly phenylene ester, polymer with.alpha.- hydro.-omega.-hydroxypoly(oxy-1, 2-ethanediyl)

Respiratory :
No additional information.

Conclusion Summary
Skin: No additional information.
Respiratory: No additional information.

Product/ingredient name	Test	Route of exposure	Species	Result
Polymethylene polyphenylene isocyanate	OECD 406 Skin Sensitization No official guidelines	skin Respiratory	Guinea pig Rat	Not sensitizing Sensitising
Propylene carbonate	- No official guidelines	skin skin	Guinea pig Human	Sensitising Not sensitizing
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	OECD 406 Skin Sensitization	skin	Guinea pig	Not sensitizing
Conclusion Summary Skin Respiratory	No official guidelines	Respiratory	Rat	Sensitising

Product/ingredient name	Test	Result
Polymethylene polyphenylene isocyanate	EU EC B.13/14 Mutagenicity- Reverse Mutation Testing using Bacteria OECD OECD 474	Negative Negative
Propylene carbonate	- OECD 482 Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells in vitro OECD 471 Bacterial Reverse Mutation Test	Equivocal Negative
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,2-ethanediyl)	OECD 474 Mammalian Erythrocyte Micronucleus Test EU EC B.13/14 Mutagenicity- Reverse Mutation Testing using Bacteria OECD OECD 474	Negative Negative Negative Equivocal

Conclusion/Summary :

Polymethylene :No mutagenic effect.

polyphenylene

isocyanate

Propylene carbonate: Not mutagenic in a standard battery of genetic toxicological tests. No mutagenic effect.

Isocyanic acid, polymethylenepoly phenylene ester, polymer with.alpha.- hydro-.omega.- hydroxypoly(oxy-1, 2-ethanediyl)

Carcinogenicity

Product/ingredient name	Test	Species	Exposure	Result	Route of exposure	Target organs
Polymethylene polyphenylene isocyanate Propylene carbonate	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies OECD 451 Carcinogenicity Studies	Rat Mouse	2 years; 5 days per week 104 weeks; 2 days per week	Negative Negative	Inhalation Dermal	- -
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.- hydro-.omega.- hydroxypoly(oxy-1, 2-ethanediyl)	OECD 453 Combined Chronic Toxicity/ Carcinogenicity Studies	Rat	2 years; 5 days per week	Negative	Inhalation	-

Conclusion/Summary :No additional information.

Reproductive toxicity

Product/ingredient name	Test	Species	Result/Result type	Target organs
Polymethylene polyphenylene isocyanate Propylene carbonate	OECD 414 Prenatal Developmental Toxicity Study	Rat	Inhalation: NOAEL	-
	OECD 414 Prenatal Developmental Toxicity Study	Rat	Oral: 1000 mg/kg NOAEL	-

Conclusion/Summary : Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.- hydro-.omega.- hydroxypoly(oxy-1, 2-ethanediyl) No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Polymethylene polyphenylene isocyanate	Category 3	Not applicable.	Respiratory tract irritation
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1, 2-ethanediyl)	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Polymethylene polyphenylene isocyanate	Category 2	Inhalation	respiratory tract
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1, 2-ethanediyl)	Category 2	Inhalation	respiratory tract

Aspiration hazard: Not available.

Information on the likely routes of exposure: Not available.

Potential acute health effects

Inhalation

Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Ingestion

Irritating to mouth, throat and stomach.

Skin contact

Causes skin irritation. May cause an allergic skin reaction.

Eye contact

Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation

Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma.

Ingestion

No specific data.

Skin contact

Adverse symptoms may include the following: irritation redness.

Eye contact

Adverse symptoms may include the following: pain or irritation watering redness

Delayed and immediate effects and also chronic effects from short and long term exposure
Short and Long term exposure

Potential immediate effects : Not available.

Potential delayed effects :

Potential chronic health effects

Conclusion/Summary : No additional information.

General : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

IARC : Polymethylene polyphenylene isocyanate 3

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Polymethylene polyphenylene isocyanate	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hours Static	Algae	>1640 mg/l
	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute EC50	3 hours Static	Bacteria	>100 mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	24 hours Static	Daphnia	>1000 mg/l
	-	Acute LC0	96 hours	Fish	>1000 mg/l

Propylene carbonate	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	>1000	mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	>=10	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOECr	72 hours Static	Algae	1640	mg/l
	DIN DIN 38412 Part 8	Acute EC50	16 hours Static	Bacteria	25619	mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	48 hours Static	Daphnia	>1000	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute ErC50 (growth rate)	72 hours Static	Algae	>900	mg/l
	EU EC C.1 Acute Toxicity for Fish	Acute LC50	96 hours Semi-static	Fish	>1000	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC	72 hours Static	Algae	900	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC	72 hours Static	Algae	929	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hours Static	Algae	>1640	mg/l
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1, 2-ethanediyl)	OECD 209 Activated Sludge, Respiration Inhibition Test	Acute EC50	3 hours Static	Bacteria	>100	mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	24 hours Static	Daphnia	>1000	mg/l
	OECD 203 Fish, Acute Toxicity Test	Acute LC50	96 hours Static	Fish	>1000	mg/l
	No official guidelines	Chronic NOEC	112 days Static	Daphnia	>10000	mg/l
	OECD 211 Daphnia Magna Reproduction Test	Chronic NOEC	21 days Semi-static	Daphnia	>=10	mg/l
	No official guidelines	Chronic NOEC	112 days Static	Fish	>10000	mg/kg
	OECD 201 Alga, Growth Inhibition Test	Chronic NOECr	72 hours Static	Algae	1640	mg/l

Conclusion/Summary : No additional information.

12.2 Persistence and degradability

Polymethylene polyphenylene isocyanate	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	28 days
Propylene carbonate	OECD 301B Ready Biodegradability - CO2 Evolution Test	29 days
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1,	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	28 days

Conclusion/Summary : No additional information.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Polymethylene polyphenylene isocyanate	Fresh water 0.8 days	-	Not readily
Propylene carbonate	-	-	Readily
Isocyanic acid, polymethylenepoly phenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly(oxy-1, 2-ethanediyl)	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Polymethylene polyphenylene isocyanate	-	200	low
Propylene carbonate	-0.5	-	low

12.4 Mobility in soil

Soil/water partition coefficient (KOC): Not available.

Mobility: Not available.

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

12.7 Other ecological information

SECTION 13: DISPOSAL CONSIDERATIONS

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
08 05 01*	waste isocyanates
16 03 05*	organic wastes containing dangerous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

	14.1 UN number	14.2 UN proper shipping name			
ADR/RID	Not regulated.	-			
IMDG	Not regulated.	-			
IATA	Not regulated.	-			
	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	14.6 Special precautions for user	Additional information
ADR/RID	-	-	No.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	-
IMDG	-	-	No.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	-
IATA	-	-	No.	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	-

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

This product is compliant with the REACH Regulation EC 1907/2006.

ACE COATINGS SL has pre-registered and is registering all of the substances that it manufactures in or imports into the European Economic Area (EEA) that are subject to Title II of the REACH Regulation.

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air: Listed

Integrated pollution prevention and control list (IPPC)-Water: Listed

Product/ingredient name	Carcinogenic effects	Mutagenic effects	Developmental effects	Fertility effects
Isocyanic acid, polymethylenepolyphenylene ester	Carc. 2, H351	-	-	-
Reaction product of isocyanic acid, polymethylenepolyphenylene ester and poly(oxy-1, 2-ethanediyl),.alpha.-methyl-.omega.hydroxy-	Carc. 2, H351	-	-	-

National regulations

References : The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974.

Australia inventory (AICS) : All components are listed or exempted.

Canada inventory : All components are listed or exempted.

China inventory (IECSC) : All components are listed or exempted.

Japan inventory : All components are listed or exempted.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC) All components are listed or exempted.

Philippines inventory (PICCS): At least one component is not listed.

United States inventory (TSCA 8b) All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals: : Not listed

Chemical Weapons Convention List Schedule II Chemicals: Not listed

Chemical Weapons Convention List Schedule III Chemicals: Not listed

15.2 Chemical Safety

Assessment

This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement

PNEC = Predicted No Effect Concentration

RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute Tox. 4, H332	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
Resp. Sens. 1, H334	Calculation method
Skin Sens. 1, H317	Calculation method
Carc. 2, H351	Calculation method
STOT SE 3, H335 (Respiratory tract irritation)	Calculation method
STOT RE 2, H373	Calculation method

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Full text of abbreviated H statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation. (Respiratory tract irritation)

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

H373 May cause damage to organs through prolonged or repeated exposure if inhaled. (respiratory tract)

Full text of classifications [CLP/GHS]

Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4

Carc. 2, H351 CARCINOGENICITY - Category 2

Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION-Category 2

Resp. Sens. 1, H334 RESPIRATORY SENSITIZATION - Category 1

Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1

STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract) (inhalation) - Category 2

STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Full text of abbreviated R phrases

R40- Limited evidence of a carcinogenic effect.

R20- Harmful by inhalation.

R48/20- Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R36- Irritating to eyes.

R36/37/38- Irritating to eyes, respiratory system and skin.

R42/43- May cause sensitisation by inhalation and skin contact.

Full text of classifications [DSD/DPD]

Carc. Cat. 3 - Carcinogen category 3

Xn - Harmful

Xi - Irritant

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